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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,011	02/04/2004	Stanford R. Ovshinsky	FC-120.3	4071

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ENERGY CONVERSION DEVICES, INC.
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ROCHESTER HILLS, MI 48309

EXAMINER

MARTIN, ANGELA J

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/07/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/772,011

Applicant(s)

OVSHINSKY ET AL.

Examiner

Angela J. Martin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/18/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-23 and 25-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-23, 25-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This Office Action is responsive to the Amendment filed on December 18, 2006. The Applicant has canceled claim 24 and incorporated claim 24 into independent claim 27. However, the rejection is made final for the following reasons of record.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 27, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin, U.S. Pat. No. 4,279,710, in view of Ovshinsky et al. U.S. Pat. Application Pub. 2004/0248005 A1.

Rejection of claims 27, 6, 7 drawn to a hybrid fuel cell.

Coughlin teaches a hybrid fuel cell comprising a fuel cell portion (col. 3, lines 65-67), an electrolytic cell portion (col. 2, lines 29-39), and an anode section (col. 2, lines 29-39), the anode section shared between fuel cell portion and electrolytic cell portion, wherein the fuel cell portion and electrolytic cell portion share an alkaline electrolyte (NaOH in col. 4, lines 5-10); and the fuel cell portion and electrolytic cell portion operating alone (Fig. 1).

Ovshinsky et al., teach an anode active material including aluminum (abstract). It teaches 90-94 wt percent of anode active material and 3-9 wt percent of a

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binder. It teaches the anode comprises a hydrogen storage material. It teaches 0-94 wt percent of hydrogen storage material, 1-95 wt percent alloy, 3-9 wt percent binder, 2-5 wt percent conductive material (sect. 0024).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Ovshinsky et al., into the teachings of Coughlin because Ovshinsky et al., teach another type of anode active material for the battery, depending on the battery choice for a particular electrical device.

3. Claims 8-12, 14-22, 25, 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin, U.S. Pat. No. 4,279,710, in view of Ovshinsky et al., U.S. Pat. No. 6,447,942 B1

Rejection of claims 8-12, 14-22, 25, 26 drawn to a hybrid fuel cell.

Coughlin teaches a hybrid fuel cell as described above.

Ovshinsky et al., teach the conductive material comprises graphite (col. 14, lines 50-53). It teaches the hydrogen storage material comprises Misch metal alloys, zirconium alloys, titanium alloys (col. 8, lines 46-58). It teaches a cathode in electrical communication with the anode (col. 12, lines 25-36). It teaches the cathode comprises a carbon matrix with an active catalyst material catalytic toward the dissociation of molecular oxygen (col. 4, lines 15-18; col. 10, lines 29-35). It teaches the catalyst is cobalt, manganese, nickel (col. 10, lines 22-26). It teaches an oxygen evolution electrode, which is a positive electrode, distributed on a substrate (col. 10, lines 51-65). It teaches electrocatalytic material comprises a host matrix and modifier element (col. 5, lines 64-67). It teaches host matrix comprises at least one transition metal (col. 5, lines

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64-67). It teaches modifier selected from Li, K, Al (col. 10, lines 19-26). It teaches the electrocatalytic material comprises Ti and Ru (col. 9, lines 36-55). It teaches oxygen evolution electrode comprises conductive material of copper, nickel (claim 15). It teaches conductive material in form of mesh, grid, foam, expanded metal (claim 16). It teaches hydrogen storage unit stores hydrogen in liquid or metal hydride form (col. 12, lines 62-67). It teaches the oxygen storage unit stores oxygen in gaseous form (col. 11, lines 64-67).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Ovshinsky et al., into the teachings of Coughlin because Ovshinsky et al., teach the a fuel cell which utilizes electrodes which "contain no costly noble metals and operate at ambient temperatures." In addition, the hydrogen storage materials store hydrogen and have "excellent catalytic activity."

4. Claim 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Coughlin, U.S. Pat. No. 4,279,710, in view of Menjak et al., U.S. Pat. Application Pub. 2003/0059664 A1.

Rejection of claim 13 drawn to a hybrid fuel cell.

Coughlin teaches a hybrid fuel cell as described above.

Menjak et al., teach the cathode comprises a peroxide decomposing material (sect. 0095).

Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to insert the teachings of Menjak et al., into the teachings of

Coughlin because Menjak et al., give examples of cathode active material in a regenerative fuel cell.

Response to Arguments

5. Applicant's arguments filed 12/18/06 have been fully considered but they are not persuasive. Applicant argues that "the '710 reference does not teach or suggest the sharing of electrolyte between the electrocatalytic cell and the fuel cell. In fact the two cells in the '710 reference use different electrolytes. The electrocatalytic cell of the '710 reference uses an acid electrolyte, while the fuel cell uses an alkaline electrolyte." However, it can clearly be seen in Fig. 1 of the '710 reference, that the electrolyte circulates between the two devices. In addition, the prior art of record teaches that the electrolyte may be NaOH, which is alkaline (col. 4, lines 5-10). Additionally, the Examiner inadvertently did not include claim 24 in the rejection of the previous Office Action, although the Examiner listed the claim as rejected in the Office Action Summary. However, since claim 24 has been incorporated in claim 27, this limitation is fully addressed:

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Shimamune, U.S. Pub. 2004/0247978 A1 teach a bipolar plate for a fuel cell and an electrolytic cell. Watanabe, JP 06-236765 teach a separator plate having anode and cathode reaction gas supply grooves, laminated between electrodes through an ion exchange membrane to form a fuel cell and an electrolytic cell.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela J. Martin whose telephone number is 571-272-1288. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AJM


PATRICK JOSEPH RYAN
SUPERVISORY PATENT EXAMINER